The Brush, Colo., crew prepares to install a new transformer bushing at the Virginia Smith Converter Station.

Yes, Virginia, there is a converter station after all

Thanks to a massive team effort by RMR crews, the Virginia Smith Converter Station is now fully functional after a fire damaged a transformer last Memorial Day.

The Converter Station is a 200-megawatt, back-to-back high-voltage direct current station in Sidney, Neb., that provides an asynchronous tie between the east and west AC power systems. Because Western uses the tie to serve loads on the east system and because other utilities rely on it to purchase the cheapest power, it was critical that the transformer be repaired as quickly as possible.

The fire started when a transformer bushing exploded. (A bushing insulates an energized conductor as it enters a piece of electrical equipment.) Oil leaking around the bushing fueled the fire until the local fire department could extinguish it.

Once the fire was put out, maintenance crews from Brush, Colo., dove right into action. Using two cranes to move the transformer units, they replaced the damaged transformer with an on-site spare. Then they tested other key equipment and made repairs or replacements.

Crews worked diligently around the clock and the station was back in temporary service on June 24. Their work was far from over, however.

The next steps involved investigating the root cause of the bushing failure and replacing the damaged equipment. “By carefully testing and inspecting the damaged transformer, we hope to cut costs by clearly defining what work needs to be performed,” said **Nick Klemm,** an electrical engineer who helped manage the project.

In October, crews from Loveland and Cheyenne joined the Brush team in replacing the bushings—a massive undertaking. Replacements involved draining 9,000 gallons of oil from each trans-

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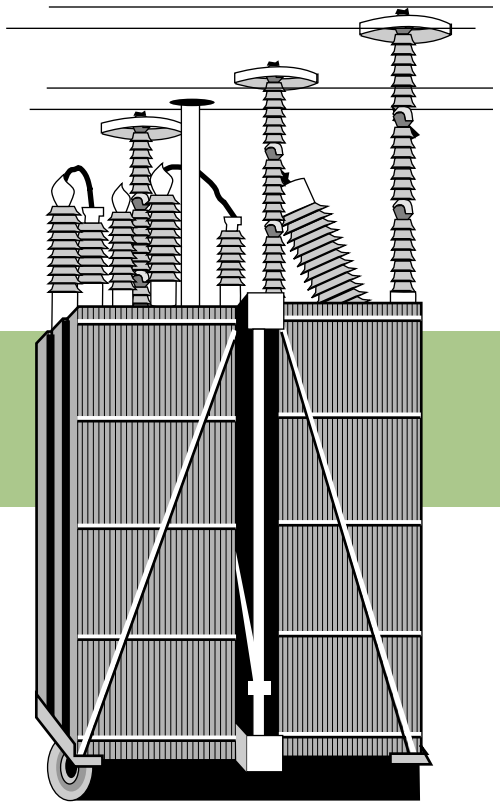
former, removing and installing the bushings, refilling the tanks with oil and venting and testing, among other tasks.

Maintenance crews worked night and day in shifts to reduce station down time. The station was back in operation on Oct. 22.



"We will continue to investigate the degradation of the original bushings and proceed with repair of the transformer and replacement of damaged items," Klemm said. Using infrared scanners, the transformers will be scanned every six months for "hot spots" or signs of potential failure.

Klemm was grateful to the crews and their supervisors for their assistance, as well as to **Jim Keselburg** and **Joel Bladow** for their commitment to the project. "As in any such task, many problems arose. Each time, individuals and teams stepped up to overcome them. I had the pleasure of working with some dedicated individuals," Klemm said.